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School and work: connections made by South African and Australian primary school children

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This exploratory-descriptive research focuses on whether children can connect school-based experiences to future jobs that interest them. A cross-national sample of 497 South African and 365 Australian upper primary school children participated in the study. The data from one item of the Revised Career Awareness Survey were analysed using descriptive and inferential statistics. Differences between nation and gender were examined. The results revealed that the majority of children were able to make curricular, extra-curricular, or general school connections to future jobs that interested them. Males made fewer curricular and general school connections and more connections to extra-curricular activities than females. The implications of the findings for career education in primary schools and for future research are discussed.

Keywords: career development; career education; career programmes; children; primary school

Introduction

At a theoretical level there has been a resurgence of interest in the career development of children, as evidenced in two recent major reviews (Hartung, Porfeli & Vondracek, 2005; Watson & McMahon, 2005). Three themes that have emerged from these reviews are the critical importance of understanding career development in this early phase of the lifespan, the limited nature of this understanding to date, and the need to understand children's career development from a learning perspective. These theoretical themes have implications for the development of career education programmes at the primary school level.

The career development of children has been acknowledged as providing foundational and precursory parameters for later adolescent career development. There is recognition that children develop their career interests, values, and aspirations based on their life experiences earlier than expected (Hartung, Porfeli & Vondracek, 2005; Savickas, 2002; Seligman, Weinstock & Owings, 1988; Wahl & Blackhurst, 2000) and that the nature of this early development impacts on future educational and career development in adolescence (McWhirter, McWhirter, McWhirter & McWhirter, 1998; Morton, Kryk, Awender & Diubaldo, 1997).

Despite the recognition of the importance of children's career development, international career research has remained predominantly focused on adolescence (Hartung, Porfeli & Vondracek, 2005; Lenhardt & Young, 2001; Tracey, 2001, 2002; Watson & McMahon, 2005). Further, most international research on children's career development has been conducted in the United

States. South African psychological research has seldom focused on children and adolescents, with only 14.8% of articles published in the *South African Journal of Psychology* between 1999 and 2003 representing this developmental span (Macleod, 2004). More specifically, South African career development research has been limited largely to secondary and tertiary students (De Bruin & Nel, 1996; Stead & Watson, 2006). Similarly, in Australia there is a limited body of research on children's career development, and a further gap in the literature exists in cross-national studies (Watson & McMahon, 2005).

The limited nature of research on children's career development is not only a quantitative but also a qualitative issue. Several authors have concluded that the past 80 years of research has led to a disparate body of literature that has created conceptual and definitional issues (Hartung, Porfeli & Vondracek, 2005; Schultheiss, Palma & Manzi, 2005; Watson & McMahon, 2005). A consistent criticism of the career research of children has been its focus on what children know about themselves and the world of work and not on how they learn this information (e.g. Tracey, 2001; Watson & McMahon, 2005). In particular, there has been a research focus on children's occupational aspirations and not on how these aspirations are formed (Hartung, Porfeli & Vondracek, 2005).

Recently there have been two comprehensive reviews of the research literature on children's career development (Hartung, Porfeli & Vondracek, 2005; Watson & McMahon, 2005). Both reviews stress the need to consider process issues in understanding the career development of children. Watson and McMahon structure their review according to a theme of learning that focuses not only on what children learn about themselves and the world of work but also on how this learning evolves. The notion of childhood career development as a dynamic interactive learning process is supported by career theory (e.g. Gottfredson, 1996; Super, 1990), with learning being regarded as a construct that can bridge the fragmented conceptualization of children's career development (Savickas, 1997).

Research on how children learn has focused on the influences with which they interact. Watson and McMahon (2005) suggest that there is a recursive process between children and a broad range of social, environmental and contextual influences such as society, socioeconomic status, ethnic differences, the media, the home environment, parents, and the school. The present research focused on the school as a potential learning influence in the career development of children.

McMahon and Patton (1997) argue that the influence of school on children's career development can be either unintentional (based on what children see and hear) or intentional (based on career intervention). Most career research on the primary school as a contextual influence has broadly focused on two issues: how schools could influence the career development of children through career education and how children make connections between school activities and future career development. The former focus is more conceptual in that it proposes what curricular content is relevant and appropriate at dif-

ferent phases of primary school life. There is general consensus that a career-based curriculum is needed from a young age in order to develop relevant foundations for future career development (Caspi, Wright, Moffitt & Silva, 1998; Seligman, Weinstock & Heflin, 1991; Watts, 1996). To this end, at the primary school level there is a national policy for career development in South Africa (Department of Education, 2002), and in Australia the Australian Blueprint for Career Development identifies competencies required by children (Miles Morgan Australia, 2003).

The role of career education in promoting career development learning is discussed more than researched. A recent review found little career research related to career intervention at the primary school level (Dagley & Salter, 2004) despite the critical role it could play in children's career development and in the capacity of children to connect school and work. In this regard, in a study on Australian sixth grade children, Gillies, McMahon and Carroll (1998b) found that career education activities led to a better understanding of and more interest in career information and a clearer perception of how school activities may relate to future work.

The literature on how children make connections between their school activities and future work can be grouped according to conceptual and research discussions. Common to both is the recognition that career education at the primary school level needs to improve on the service it provides. At a conceptual level there is a recognition that the school-work connection needs to be an integral aspect of career education programmes (e.g. Hoffman & McDaniels, 1991). Several authors have called for more direct, sequential, simulated and vicarious experiential learning that would help primary school children to better connect their school activities with the future world of work (Gysbers, 1996; Harkins, 2000; 2001). At an empirical level there has been a call for research on the school-work connection in order to better inform career interventions at the primary school level (Harkins, 2001; Schultheiss, Palma & Manzi, 2005).

Research on children's ability to make a connection between school-based activities and future work would indicate the need for career education at the primary school level. Most of this research demonstrates that primary school children fail to make any meaningful connection between school activities and their career development. For instance, Hutchings (1996) established that home and extramural activities were the most frequently cited influences on career development with no primary school children referring to influences provided through the school curriculum. Similarly, Johnson (2000) concluded that children may not make any connection between their school curriculum and the learning opportunities it provides for future work. In addition, Johnson's research also found that fewer than one in five children found their favourite school subject relevant to future work.

In one of the few studies conducted outside the US, McMahon and Patton (1997) found that children could make links between school work and future work but few commented on process issues (i.e. how they went about learn-

ing) and how these may link to future work. Two other findings from this study are of interest. One is the ability of children to make links between what the authors termed the hidden curriculum (e.g. how to learn manners) and career development. The other finding is that boys generally found school activities more useful for future work than girls, a gender difference that has not been explored in other research in this field. Similar research by McMahon, Gillies and Carroll (2000) found that Australian children perceived the whole school experience as influential for future work. In addition to curricular activities, these children nominated learning experiences from their extra-curricular activities and from their general participation in school life.

Given the limited nature of research on children's perceptions about the connection between school-based activities and future work, there has been a call for further research on this developmental lifespan (Schultheiss, Palma & Manzi, 2005). The present study formed part of a cross-national research project which explored various aspects of career development in children in South Africa and Australia. Specifically, this study aimed to describe whether children connect their school activities to future work and examined for national and gender differences in this process.

Method

Participants

The national samples were obtained by means of non-probability sampling and comprised 497 South African and 365 Australian upper primary public school students from Grades 6 and 7 in three South African and six Australian urban schools. Sampling was also purposive to ensure that both national samples were first language English speakers and from families of middle to upper socioeconomic status. Sampling requirements made the South African sample less representative of the general population than was the case with the Australian sample. The students were aged between 11 and 14 years, with a mean age of 12 years 8 months ($SD = 3.14$). The mean age for the Australian sample was 12 years 4 months ($SD = 4.75$), and the mean age for the South African sample was 12 years 11 months ($SD = 0.72$). Of the South African students, 285 were males and 212 females. The Australian sample comprised 180 males and 185 females.

Instrumentation

The Career Awareness Survey (Gillies, McMahon & Carroll, 1998a; 1998b; McMahon, Carroll & Gillies, 2001; McMahon, Gillies & Carroll, 2000), which gathers information about children's knowledge and understanding of the world of work, was modified for the present research to ensure the cross-national applicability of occupations listed. The Revised Career Awareness Survey (RCAS) has five sections which have been described in the literature (McMahon & Watson, 2005; Watson & McMahon, 2004). Questions in the RCAS were based on the previously established survey. Children from each country who were at the extremes of the selected age range, i.e. 11 and 14

years, completed the survey to assess its comprehensibility and readability. All children could read and understand the survey. Content validity was ensured through the involvement of two psychology experts with registration in educational and research psychology, as well as by referring to the extant literature on children's career development.

The present research reported on the findings of the open-ended item from Section 1, which assesses children's personal-social knowledge. Specifically it focuses on the question "What do you do at school that might help prepare you for the jobs that interest you?".

Design and procedure

The present cross-national study was exploratory and descriptive in nature. A between-groups comparison design was used to compare national and gender groups. Participating schools were sent an information package describing the aim and benefits of the study. Information letters and consent forms were also sent to parents. Students were invited to participate, and the resulting samples were voluntary in nature. For both the South African and Australian samples, the RCAS was administered in a classroom by trained personnel. While no time limit was specified, all students were able to complete the survey within a normal class period.

Data analysis

The item reported on here, "What do you do at school that might help prepare you for the jobs that interest you?", was open-ended and participants could list multiple responses. All responses were coded according to categories based on those developed by McMahon, Gillies and Carroll (2000). Table 1 illustrates the five coding categories applied as well as examples of responses provided by the participants. A null response category was reported for each table. Two trained psychologists independently coded each response for each participant. The inter-rater reliability was 0.89 with differences occurring mainly in decisions about uncodeable responses. Rating differences were resolved through consultation.

Table 1 Coding system and examples of participant responses

Code	Example of response
1. Curriculum subjects	Mathematics, physical education, social studies
2. Topics/activities covered in the curriculum	Writing essays, hygiene, debating
3. Extra-curricula activities	Choir, field trips, first aid
4. General participation in school	Watching teachers, studying hard, obeying rules
5. Uncodeable	Driving fast, fighting, accidents

Descriptive statistics were reported, including the mean number of responses per participant and the frequency of accumulated responses per coding category for the total sample as well as for gender and nation. In addition, inferential statistics in the form of *z* tests were calculated in order to test for significant differences between national and gender groups.

Results

For all total sample groups (total sample, total nation, total gender) the number of responses for participants ranged from one to five. The mean number of responses for the total sample was 1.82, for males 1.65, for females 1.64, for South African participants 1.51, and for Australian participants 1.83. Table 2 describes the frequencies and percentages of accumulated responses for total sample, nation, and gender. A total of 1 570 responses was recorded. Codes were listed numerically according to those used in Table 1.

As shown in Table 1, codes 1 and 2 related to curricular related responses, specifically those of curriculum subjects and topics/activities covered in the curriculum. When these two codes were considered together in Table 2, the percentage of participants connecting curricular activities to the jobs they were interested in ranged between 63.15% for Australian males and 74.81% for South African females. Conversely, it is of interest to note that 25% or more of participants, across total sample, nation, and gender, made no connection between curricular activities and the jobs that interested them. In particular, over one-third of Australian males (36.85%) did not relate the formal academic school curriculum to the jobs they wanted to do. As indicated by the null category, a small percentage of participants were unable to make any connection between what they did at school that might help prepare them for the jobs that interested them. The highest percentage in this regard was that of the Australian males (5.88%).

In addition to curricular connections, the participants were able to make connections between the jobs they were interested in and extra-curricular activities and general participation in school. These percentages were below 15% in all sample groups for each of these two codes. A small percentage of participants provided responses that were uncodeable in relation to participation in school.

Table 3 reports the *z* values for nation and gender comparisons. There were significant differences across nations for all codes. Most significant differences were found between South African and Australian males. Significant differences were found in the total gender sample for topics/activities covered in the curriculum, extra-curricular activities, and general participation in school. In relation to the jobs that interested them, males made fewer connections to topics/activities covered in the curriculum and general participation in school and more connections to extra-curricular activities and the jobs that interested them than females, as was evident from the means reported in Table 2.

Table 2 Responses for total sample, nation, and gender

Code	Total responses by nation and gender										South African responses by gender				Australian responses by gender			
	Total		Australian		Sth African		Male		Female		Male		Female		Male		Female	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	956	60.90	380	54.44	576	66.06	490	60.79	466	60.99	324	67.08	252	64.78	166	51.39	214	57.07
2	150	9.55	90	12.90	60	6.88	59	7.32	91	11.91	21	4.35	39	10.03	38	11.76	52	13.87
3	157	10.00	80	11.46	77	8.83	99	12.28	58	7.59	52	10.77	25	6.42	47	14.55	33	8.80
4	135	8.60	45	6.45	90	10.32	59	7.32	76	9.95	45	9.31	45	11.58	14	4.34	31	8.27
5	120	7.64	68	9.74	52	5.96	67	8.32	53	6.94	28	5.80	24	6.16	39	12.08	29	7.73
Null	52	3.31	35	5.01	17	1.95	32	3.97	20	2.62	13	2.69	4	1.03	19	5.88	16	4.26
Total	1 570	100	698	100	872	100	806	100	764	100	483	100	389	100	323	100	375	100

Table 3 z Values for nation and gender

Code	Total sample Nation		Total males South Africa and Australia		Total females South Africa and Australia		Total sample Gender		South Africa Males and Females		Australia Males and Females	
	z value	p	z value	p	z value	p	z value	p	z value	p	z value	p
1	3.06	0.0011**	2.38	0.0087**	1.94	0.0262*	-0.34	0.3669	-0.24	0.4052	-0.69	0.2451
2	1.67	0.0475*	-1.59	0.0559	-0.58	0.2810	-2.24	0.0125*	-2.04	0.0207*	-0.85	0.1977
3	-2.29	0.011*	-0.51	0.3050	-1.00	0.1587	3.18	0.0007**	0.89	0.1867	1.97	0.0244*
4	1.81	0.0351*	2.31	0.0104*	0.85	0.1977	-2.14	0.0162*	-1.23	0.1093	-2.37	0.0089**
5	-3.15	0.0008**	-2.90	0.0019**	-1.48	0.0694	0.75	0.2266	0.09	0.4641	1.31	0.0951
Null	-2.14	0.0162*	-1.36	0.0869	-1.50	0.0668	1.14	0.1271	1.44	0.0749	0.56	0.2877

* significant ($p < 0.05$)** significant ($p < 0.01$)

Discussion

The results revealed that most children could identify school activities that might help prepare them for the jobs that interested them, making up to five connections whether these were curricular or not. This finding supported previous research (McMahon, Gillies & Carroll, 2000; McMahon & Patton, 1997) which found Australian children could make connections between their whole-school experience and jobs that interested them. However, it is important to note that these connections were differential across nation and gender.

By far the most connections made by the children to their jobs of interest were related to subjects, topics and activities covered in the school curriculum. It needs to be noted that more than a quarter of participants in all sample groups could make no connection to their formal school curriculum. The latter finding is consistent with research that has found primary school children are unable to make such connections (Hutchings, 1996; Johnson, 2000).

A different pattern emerged when considering the connections made by children to the more informal aspects of their school experience such as their extra-curricular activities and general school participation. While a large percentage of participants were able to make connections to their formal school curriculum, a much smaller percentage of participants in each sample group made connections to their informal school experiences. Further, some participants were unable to make any connection between the jobs that interested them and their formal and informal school experiences or offered responses that were uncodeable.

What was uncertain in the present study was whether the connections made by participants resulted from intentional or unintentional learning (McMahon & Patton, 1997). Intentional career development learning could refer to career related learning that is explicit in the broader curriculum and/or in the career education curriculum. Unintentional career development learning related to conclusions drawn by participants about the relationship between their school experiences and future work. There was some evidence that intentional career development learning may enhance children's capacity to relate their school experiences to future work (Gillies, McMahon & Carroll, 1998b), which suggested a consideration of the present findings in relation to career curriculum design at the primary school level.

There were limitations to the present research, one of which was the selected nature of the sample. This limited the generalisability of the research findings. Another limitation was that, while the present research demonstrated that children did make school to work connections, the nature of how children make such connections remained uncertain. Further, children's curricular connections to work could have been a consequence, in part, of their interpretation of the question which focused their attention on what children did at school that could be related to future work. Future research should consider the possibility of two separate questions here which focus on children's ability to connect work with both curricular and non-curricular activities. Despite such limitations, this study critically pointed out that most

children did make connections between school experience and future work, a finding that has implications for curriculum development.

National and gender differences and curriculum implications

Several significant national and gender differences were evident in the participants' connection of their school experience with the jobs that interested them. In particular, national differences were noted in all codes and this was particularly evident in the male sample. Males made fewer connections to the formal school curriculum (topics and activities), and differential connections to the informal school curriculum (less for general participation in school and more for extra-curricular activities). This gender finding contradicted McMahon and Patton's (1997) qualitative finding that males from a range of school age groups made better connections between school experiences and future work. This difference may be accounted for by the research methodology and the range of ages in McMahon and Patton's study. Of interest in the present study are the results for the Australian males, one third of whom made no curricular connections. In addition, Australian males represented the highest percentage making null, uncodeable, and extra-curricular connections, and the lowest percentage making general participation in school connections.

There have been specific calls for research to better inform career programmes at the primary school level (Harkins, 2001; Schultheiss, Palma & Manzi, 2005). The findings of the present research clearly endorsed these sentiments given the differential nature of the national and gender responses. They suggested two possible implications for career curricula design, for policy makers and for primary school teachers. First, such design needs to be differentially considered and, second, more could be done to assist children to foster holistic connections between their school experience and the jobs they are interested in.

Gysbers and Henderson (2006) alert us to the need for differential consideration of career programme design by recommending that it is founded on an understanding of what students know, learn, and need, and on students' contextual influences. The present and previous research (McMahon & Patton, 1997) has also highlighted this need. Differential consideration implies that programmes cannot simply be adopted from the international literature without adapting them to meet the particular contexts of individual countries and their students. Given the present research findings, the implementation of the Australian (Miles Morgan Australia, 2003) and South African (Department of Education, 2002) guidelines and policy documents may be best evaluated in terms of national and local needs rather than international comparisons.

There is also a need to examine whether career development is being fostered in a holistic manner as recommended in the literature (Harkins, 2000, 2001) given that the participants in the present study were not connecting their whole school experience to future work. For example, participants' responses were skewed towards curricula connections with few participants seeing their broader school experiences as relevant to the jobs they were

interested in. A more holistic approach to career program design would assist children to gain a better understanding of what they learn, why they learn it, how they will use it, and what difference it will make in their lives (Johnson, 2000) and in so doing enhance their career development skills (Arrington, 2000).

The present research suggested that most participants were able to connect some of their school experiences with the jobs they were interested in. However, this ability to connect varied in two ways, specifically across nation and gender and also in terms of the skewed nature of the connections participants made. The latter research finding is important as it demonstrated the need to contextualize career education within the environment in which children's career development occurs. Strengths of the present study were the sample size and the international comparison it provided. However, further research is required across larger and more diverse samples and nations. In addition, future research could explore not only the connections that children make between school and work, but also how they make those connections. Such research could assist in the design and implementation of more relevant career policies and programmes at the primary school level.

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